(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 15 September 2005 (15.09.2005)

PCT

(10) International Publication Number WO 2005/086536 A1

(51) International Patent Classification⁷: H04R 25/00, A61F 11/14, G10K 11/16

(21) International Application Number:

PCT/EP2005/050843

(22) International Filing Date: 28 February 2005 (28.02.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PA 2004 00357

2 March 2004 (02.03.2004) DF

- (71) Applicant (for all designated States except US): OTICON A/S [DK/DK]; Strandvejen 58, DK-2900 Hellerup (DK).
- (72) Inventor: and
- (75) Inventor/Applicant (for US only): KAULBERG, Thomas [DK/DK]; c/o Oticon A/S, Strandvejen 58, DK-2900 Hellerup (DK).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

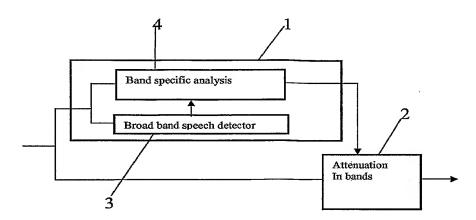
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM,

[Continued on next page]

(54) Title: METHOD FOR NOISE REDUCTION IN AN AUDIO DEVICE AND HEARING AID WITH MEANS FOR REDUCING NOISE



(57) Abstract: The invention regards a method for noise reduction in an audio device whereby an electrical and/or digital signal which represents sound is routed simultaneously through: - a signal analysis path, and- a signal processing path wherein the signal amplification is individually controllable in specific frequency bands by attenuation values derived from the signal analysis path, whereby the signal in the signal analysis path is routed simultaneously through: - a first detector which identifies the presence of speech indicators in the overall signal, and- a second detector which in a predefined number of frequency bands detects the modulation amplitude, and- where attenuation values in each of the predefined frequency bands are calculated based on the combined results of the first detector and the modulation amplitude in the specific frequency band detected by the second detector, - where the attenuation values in the predefined number of frequency bands are routed to the signal processing path in order to attenuate the signal level in corresponding frequency bands.

WO 2005/086536 A1



AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— of inventorship (Rule 4.17(iv)) for US only

Published:

with international search report

 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.